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(71) Applicant (for all designated States except US): NIQUOOLA PTY. LTD. [AU/AU]; Suite 5/1 Railway Street, Baulkham Hills, NSW 2153 (AU).

(72) Inventor; and

(75) Inventor/Applicant (for US only): BISWAS, Nicholas [AU/AU]; 5/1 Railway Street, Baulkham Hills, NSW 2153 (AU).

(74) Agent: SPRUSON & FERGUSON; G.P.O. Box 3898, Sydney, NSW 2001 (AU).

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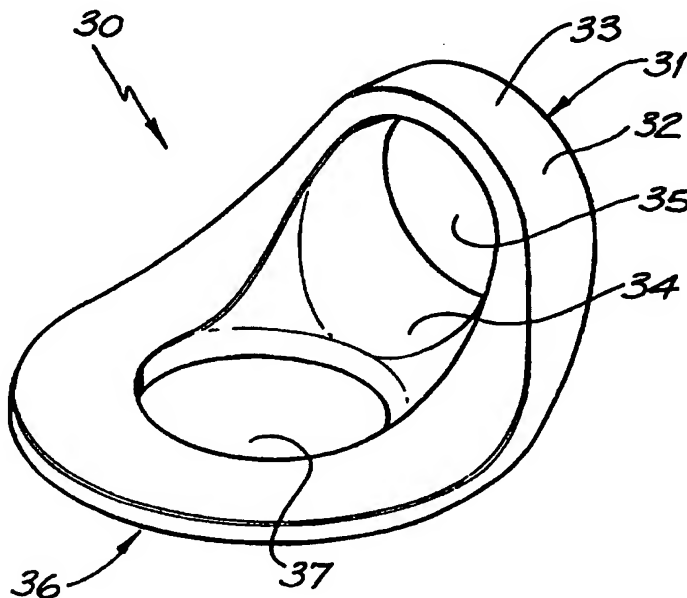
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With international search report.

(54) Title: AN INTRA-VAGINAL DEVICE

(57) Abstract

An intra-vaginal device (30) to aid in controlling urinary incontinence. The device (30) has a base (31) from which there projects a rear part (34). The rear part (34) engages the posterior vaginal wall and rests on the pelvic floor and projects towards the cervix. The base (31) has a convex surface (33) which engages the anterior vaginal wall to support the vaginal wall and the urethra therebehind.



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AN INTRA-VAGINAL DEVICE

Technical Field

The present invention relates to intra-vaginal devices to aid in controlling urinary incontinence.

Background of the Invention

Disclosed in USA Patent 4,139,006 is an intra-vaginal device for controlling urinary incontinence in female patients. The device is slightly arcuate so as to have slightly raised anterior and posterior vaginal wall engaging portions with a lower central aperture. The anterior portion has a pair of projections generally within the plane of the device which engage the vaginal wall to apply pressure to the urethra, to close the urethra. USA Patents 5,036,867 and 4,920,986 also disclose intra-vaginal devices to aid in controlling urinary incontinence. However, these devices are arcuate in the opposite direction to the previous device and engage the anterior vaginal wall to cradle the bladder neck. The urethra is not closed. USA Patent 4,920,986 discloses a modification of the previous two devices but again the device cradles the bladder neck.

The above mentioned devices have enjoyed some success in meeting their objectives, however, there is still a body of patients in which the above devices fail to alleviate the problems in respect of urinary incontinence.

Object of the Invention

It is the object of the present invention to overcome or substantially ameliorate the above mentioned disadvantage.

Summary of the Invention

There is disclosed herein an intra-vaginal device to aid in controlling urinary incontinence, said device comprising:

a base to extend between the anterior vaginal wall and the posterior vaginal wall, so as to apply pressure to the urethra to close the urethra, said base having a forward part to engage the anterior vaginal wall and a rear part to engage the posterior vaginal wall; and a back portion extending from said rear part so that in use it extends therefrom toward the cervix.

Preferably the base part is generally perpendicular to the rear part.

There is further disclosed herein an intra-vaginal device to aid in controlling urinary incontinence, said device comprising:

a base to extend between the anterior vaginal wall and the posterior vaginal wall of a patient, so as to apply pressure thereto, said base having a forward convex surface to engage the anterior vaginal wall to support and elevate the anterior vaginal wall and urethra, and a rear part to engage the posterior vaginal wall; and

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a back portion extending from said rear part so that in use it extends therefrom towards the cervix and is supported on the pelvic floor so as to distribute the pressure applied to the posterior wall.

Brief Description of the Drawings

5 A preferred form of the present invention will now be described by way of example with reference to the accompanying drawings wherein:

Figure 1 is a schematic perspective view of an intra-vaginal device to aid in the controlling of urinary incontinence;

10 Figure 2 is a schematic perspective view of a further intra-vaginal device to aid in the controlling of urinary incontinence;

Figure 3 is a schematic side elevation of the device of Figure 1 or Figure 2 schematically illustrated in a woman's vagina;

Figure 4 is a schematic perspective view of an intra-vaginal device to aid in controlling urinary incontinence;

15 Figure 5 is a schematic top plan view of the device of Figure 4;

Figure 6 is a schematic end elevation of the device of Figure 4;

Figure 7 is a schematic side elevation of the device of Figure 4;

Figure 8 is a schematic perspective view of a further device to aid in controlling urinary incontinence;

20 Figure 9 is a schematic side elevation of the device of Figure 8;

Figure 10 is a schematic top plan view of the device of Figure 8; and

Figure 11 is a schematic end elevation of the device of Figure 8.

Detailed Description of the Preferred Embodiment

In Figures 1 to 3 of the accompanying drawings there is schematically depicted an
25 intra-vaginal device 10 to aid in controlling urinary incontinence. The device 10 includes a base portion 11 of a "D" configuration so as to provide a central aperture 12. The base portion 11 has a forward part 13 which engages the anterior vaginal wall. Extending from the rear part 14 is a back portion 15 also of a "D" shaped configuration. The portion 15 is provided with a central aperture 16. The back portion 15 has a lower part
30 17 joined to the rear part 14 so that the back part 15 may be resiliently moved angularly toward the base portion 11 about the join between the parts 14 and 17.

Preferably the base portion 11 is approximately perpendicular to the back portion 15.

In the embodiment of Figure 2, the back portion 15 is not provided with the
35 aperture 16. Also an intermediate portion 18 is provided joining the base portion 11 to the back portion 15 to permit relative angular movement thereof about the intermediate portion 18.

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Preferably the device 10 would be formed of plastics material and would be moulded.

As best seen in Figure 3, the device 10 engages the posterior vaginal wall 19 and extends to the pelvic floor muscle 20. The forward part 13 engages the anterior vaginal wall 21 so as to compress the urethra 22, so as to close the urethra 22.

Preferably the back portion 15 would be convex so as to project toward the anterior wall 19.

Preferably the device 10 would be also configured so as to aid in elevation of any prolapse.

10 In Figures 4 to 7 of the accompanying drawings there is schematically depicted an intra-vaginal device 30 to aid in controlling urinary incontinence. The device 30 includes a base 31 having a forward arcuate part 32 with a forward convex surface 33 which engages the anterior wall to support and elevate the anterior vaginal wall and the urethra behind the vaginal wall. In that regard it should be appreciated that the device 30 does
15 not close the urethra. The base 31 is generally of a toroidal configuration and provides a rear part 34 and a central aperture 35.

Extending generally normal to the base 30 and from the rear part 34 is a back portion 36 which is also generally of a toroidal configuration and has a central aperture 37. In use the back portion 36 engages the posterior vaginal wall and is supported by the
20 pelvic floor and projects generally toward the cervix from the base 31. The base 31 extends between the posterior and anterior vaginal walls to apply pressure thereto. The pressure applied to the posterior vaginal wall is distributed over the back portion 36.

Preferably the device 30 would be formed of a resilient plastics material.

The above described preferred embodiment described with reference to Figures 4 to
25 7 is particularly suited for use by women with incontinence and prolapse with a poor pelvic floor.

In Figures 8 to 11 of the accompanying drawings there is schematically depicted an intra-vaginal device 40 to aid in controlling urinary incontinence. The device 40 has a base 41 provided with an arcuate forward part 42. The part 42 has a convex surface 43
30 which applies pressure to the anterior vaginal wall to support the vaginal wall and urethra therebehind. The base 31 is of a toroidal configuration having a central aperture 45.

Projecting generally normal from the base 41 is a back portion 46 which is generally "oval" in configuration. The back portion 36 has a central slot 47.

The base 41 extends between the anterior and posterior vaginal walls to apply
35 pressure thereto. The pressure applied to the posterior vaginal wall is distributed over the back portion 46. The back portion 46 projects towards the cervix and is supported by the pelvic floor.

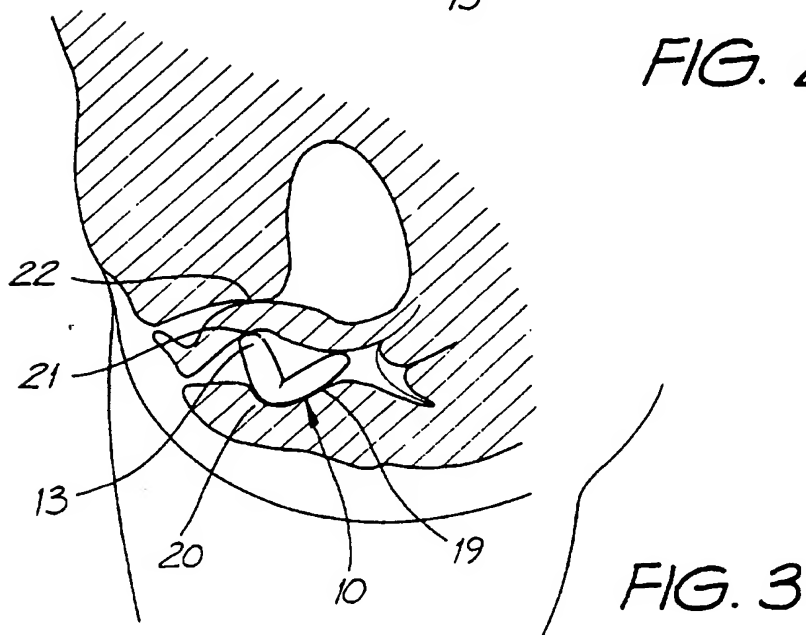
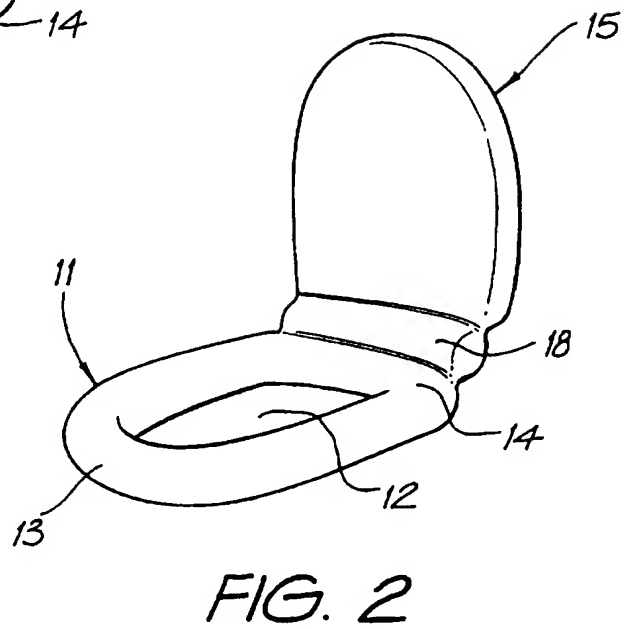
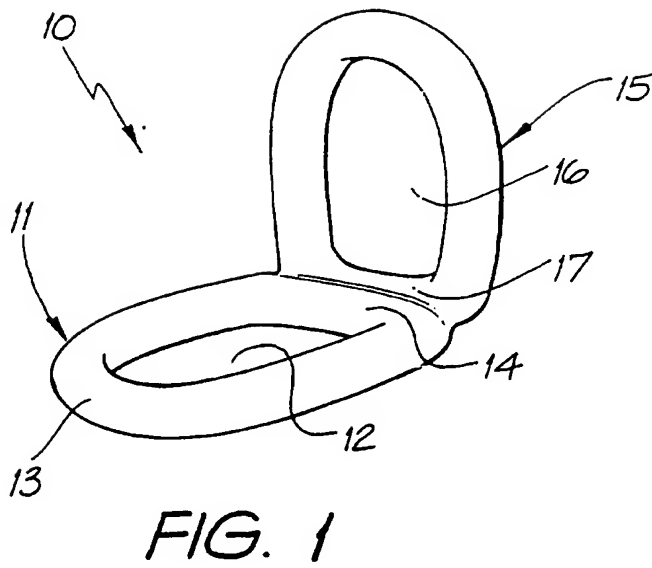
-4-

The device of Figures 8 to 11 is suitable for younger women with prolapse and urinary incontinence. Preferably it would be formed of an absorbent material so that it could also act as a tampon.

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CLAIMS

1. An intra-vaginal device to aid in controlling urinary incontinence, said device comprising:
 - a base to extend between the anterior vaginal wall and the posterior vaginal wall of
5 a patient, so as to apply pressure thereto, said base having a forward convex surface to engage the anterior vaginal wall to support and elevate the anterior vaginal wall and urethra, and a rear part to engage the posterior vaginal wall; and
 - a back portion extending from said rear part so that in use it extends therefrom towards the cervix and is supported on the pelvic floor so as to distribute the pressure
10 applied to the posterior wall.
2. The device of claim 1, wherein said base is generally toroidal in configuration so as to have a central aperture and said back part extends generally normal therefrom.
3. The device of claim 1 or 2, wherein said back part is generally of a toroidal configuration having a central aperture.
- 15 4. The device of claim 1 or 2, wherein said back portion is generally of an oval configuration and projects generally normal from said base.
5. The device of claim 4, wherein said back portion has a central slot.
6. The device of any one of claims 1 to 5 formed of resilient plastics material.
7. The device of any one of claims 1 to 5 formed of an absorbent material so as
20 to act as a tampon.
8. An intra-vaginal device to aid in controlling urinary incontinence, said device comprising:
 - a base to extend between the anterior vaginal wall and the posterior vaginal wall, so
as to apply pressure to the urethra to close the urethra, said base having a forward part to
25 engage the anterior vaginal wall and a rear part to engage the posterior vaginal wall; and
 - a back portion extending from said rear part so that in use it extends therefrom toward the cervix.
9. The device of claim 8, wherein said base is generally perpendicular to said rear part.
- 30 10. The device of claim 8 or 9, wherein said base and/or said back part are of a "D" configuration.
11. The device of claim 8, 9 or 10, wherein said base is provided with a central aperture.
12. An intra-vaginal device to aid in controlling urinary incontinence, said device
35 being substantially as hereinbefore described with reference to Figures 1 to 3, Figures 4 to 7 or Figures 8 to 11.



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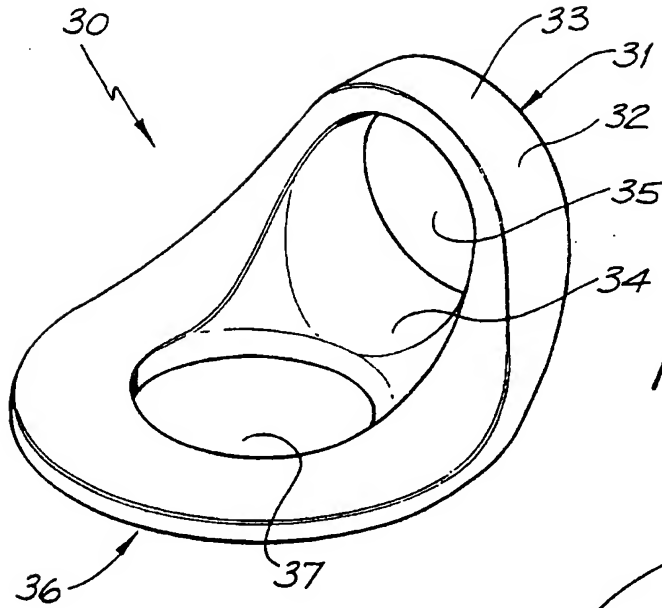


FIG. 4

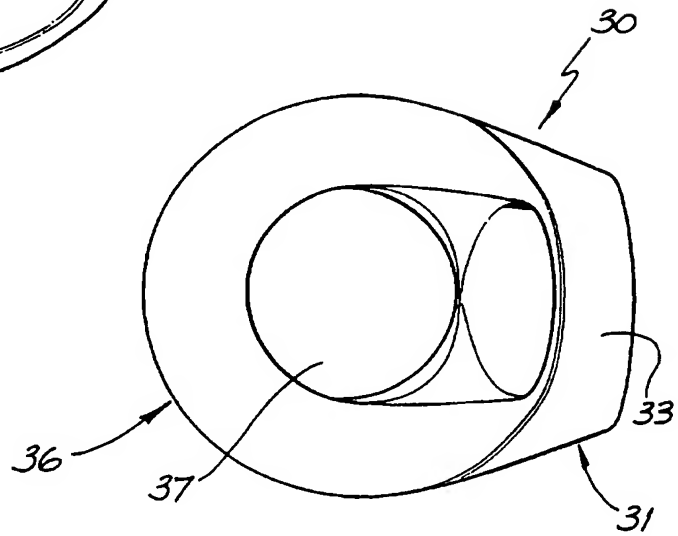


FIG. 5

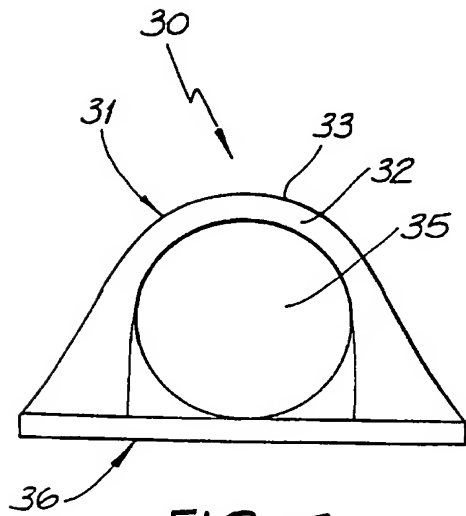


FIG. 6

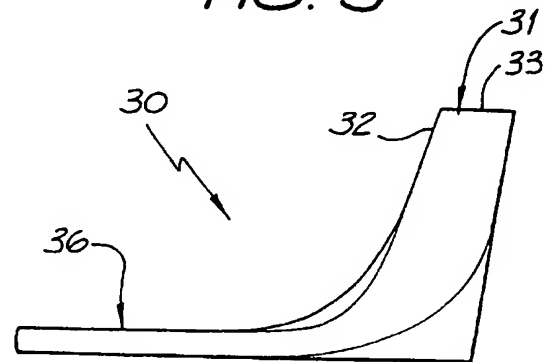
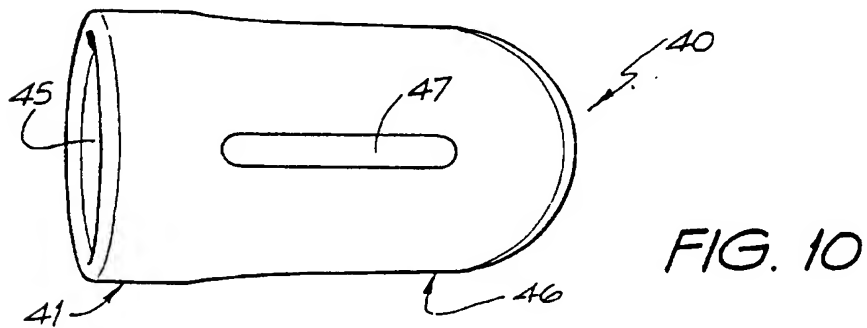
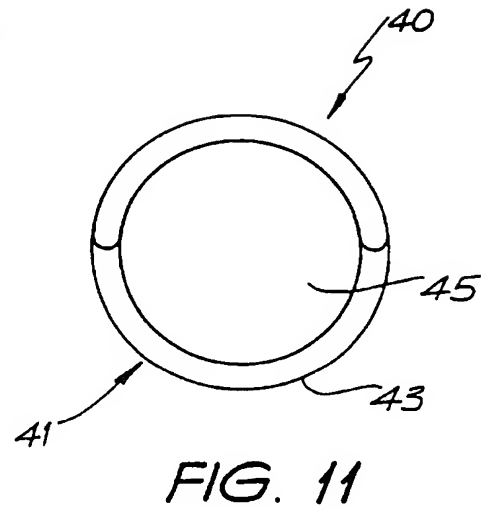
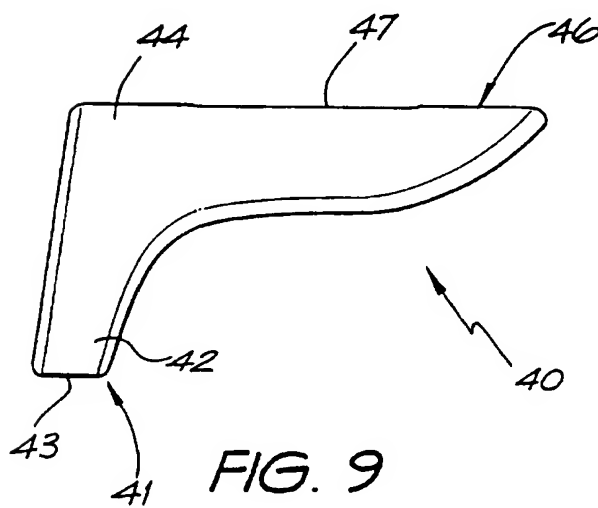
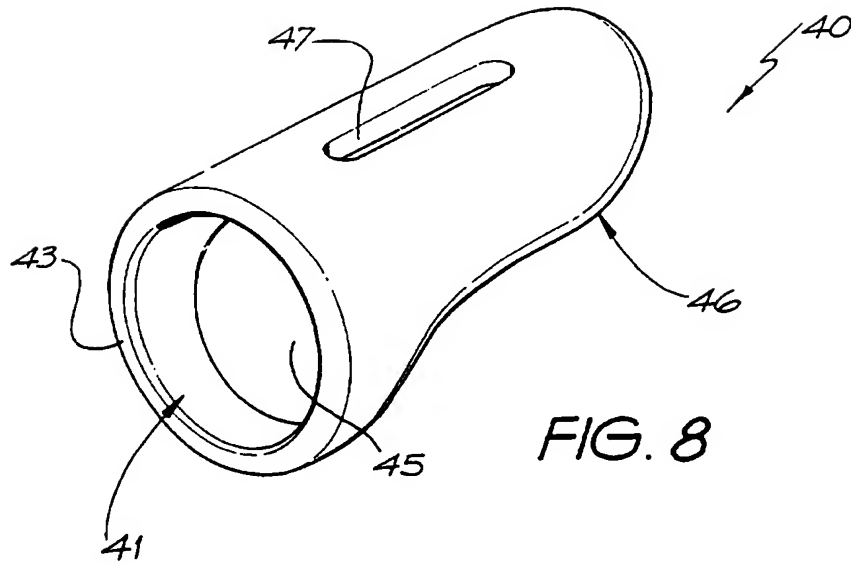


FIG. 7



INTERNATIONAL SEARCH REPORT

International Application No.

PCT/AU 97/00186

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl⁶: A61F 5/48, 6/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61F 5/48, 5/46, 6/08

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU:IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DERWENT: A61F 2/-, 5/-, 6/-; PESSAR, SUPPOSITOR, SUPPORT, INCONTIN, PROLAPS, STRESS, BLADDER, URETHRA, URINA, SPHINCTER, CERVI, INTRA VAGINA, UTERUS.
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1790801 (DICKSTEIN) 3 February 1931 See figures	1,8
X	EP 460807 (ZEDLANI PTY LTD) 11 December 1991 See figures	1, 3-5, 8, 9
X	EP 264258 (ZEDLANI PTY LTD) 20 April 1988 See figures	1, 5, 8, 9



Further documents are listed in the continuation of Box C



See patent family annex

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Date of the actual completion of the international search
28 May 1997

Date of mailing of the international search report

10 JUN 1997

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PO BOX 200
WODEN ACT 2606
AUSTRALIA Facsimile No.: (06) 285 3929

Authorized officer

S Thomas

Telephone No.: (06) 283 2454

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International Application No.

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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 3720858 (MONKS) 5 January 1989 See figures	1,8
Y	FR 2698781 (CHANEZ) 10 June 1994 See figures	1,8
A	DE 501023 (SAUER) 27 June 1930 See figures	
A	US 4139006 (COREY) 13 February 1979 See figures	
A	US 4019498 (HAWTREY et al) 26 April 1977 See figures	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/AU 97/00186

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	4139006	NONE					
EP	460807	AU	76382/91	US	5386836	US	4920986
		US	5036867	JP	63177852	AU	80110/87
		EP	264258	IN	166558	NZ	222169
EP	264258	AU	80110/87	IN	166558	NZ	222169
		US	4920986	US	5036867	US	5386836
		AU	76382/91	EP	460807	JP	6317782
DE	3720858	NONE					
FR	2698781	AU	56533/94	BR	9305852	CA	2129530
		CZ	9401905	EP	625890	FI	943658
		HU	69456	NO	942937	NZ	258594
		SK	944/94	WO	9413223		
US	4019498	NONE					
END OF ANNEX							